

CLAIMS:

5
SUB 4
1. A masked expression cassette comprising a double stranded nucleic acid molecule wherein a first strand comprises an RNA sequence which codes for a protein of interest linked downstream of a flanking sequence, and a translation initiation site operably inserted upstream of the RNA sequence; and,

10 a second antisense strand bound to the flanking sequence wherein said second strand corresponds to an antisense oligonucleotide to a target molecule.

16
2. The cassette of claim 1, wherein said cassette further comprises a 7-methyl guanine cap linked to the 5' end of the flanking sequence.

15
3. The cassette of claim 1, wherein said protein of interest encodes a toxin.

SUB AS
4. The cassette of claim 1, wherein said target comprises an oligonucleotide which is unique to neoplastic cells.

20
5. A method for inhibiting the growth of neoplastic cells, said method comprising contacting said cells with a masked expression cassette comprising a double stranded nucleic acid molecule;

25 wherein a first strand comprises an RNA sequence which codes for a protein of interest linked downstream of a flanking sequence, and a translation initiation site operably inserted upstream of the RNA sequence; and,

a second antisense strand bound to the flanking sequence, wherein said second strand corresponds to an antisense oligonucleotide to a target molecule.

30
6. The method of claim 5, wherein said cassette further comprises a 7-methyl guanine cap linked to the 5' end of the flanking sequence.

23

7. The method of claim 5, wherein said translation initiation site comprises a Kozak sequence.

8. The method of claim 5, wherein said protein of interest is a toxin.

9. The method of claim 8, wherein said target comprises a nucleotide sequence which is unique to neoplastic cells.

10. A method for controlling the expression of a protein of interest in the presence of a target molecule, said method comprising contacting a cell comprising the target molecule with a marked expression cassette comprising a double stranded nucleic acid molecule, wherein a first strand comprises an RNA sequence which codes for a protein of interest linked downstream of a flanking sequence, and a translation initiation site operably inserted upstream of the RNA sequence; and,

a second antisense strand bound the flanking sequence wherein said second strand corresponds to an antisense oligonucleotide to a target molecule.

11. The method of claim 10, wherein said cassette further comprises a 7-methyl guanine cap linked to the 5' end of the flanking sequence.

12. The method of claim 10, wherein said protein of interest encodes a toxin.

13. The method of claim 10, wherein said target comprises a nucleotide sequence which is unique to neoplastic cells.

5 14. A method for producing a protein of interest in a specific organ, said method comprising contacting cells of said organ with a masked expression cassette comprising a double stranded nucleic acid molecule, wherein a first strand comprises an RNA sequence which codes for said protein of interest linked downstream of a flanking sequence, and a translation initiation site operably inserted upstream of the RNA sequence; and,

a second antisense strand bound to the flanking sequence wherein said antisense strand corresponds to a target molecule specific to said organ.

10 15. The method of claim 14, wherein said cassette further comprises a 7-methyl guanine cap linked to the 5' end of the flanking sequence.